

fact, hermetically sealed. The turgescence of the body would then take place by osmosis, and the apical pores of the tentacles would have the double function (*a*) of the periodical or perhaps constant discharge in small quantities of the excess of liquid, (*b*) of its rapid discharge when, in defence, the animal wishes rapidly to reduce its bulk.

Note II.—The nephrostomes of Rotifers and many other lower Vermes are described as having a single long flagellum working inside them. Now from the same optical reasons that make it impossible to conclude from the mere microscopic picture what is the true structure of striated muscle or the markings of a Diatom, it is equally impossible to conclude what is the true structure of these “flame-like” nephrostomes. A lining of fine vibratile cilia would leave an undulating lumen that would be optically identical with the supposed single flagellum. The precise attachments and working of such a flagellum form a problem that no one has attempted to tackle; whereas the view that there is a lining of fine cilia offers no such difficulties; and this view is hence the more plausible. It has, moreover, the advantage of completely homologizing these structures with the nephridia of their more highly organized allies.

XLIII.—*The New System of Chalininæ, with some Brief Observations upon Zoological Nomenclature.* By ARTHUR DENDY, B.Sc., F.L.S., Assistant in the Zoological Department of the British Museum.

THROUGH the kindness of my friend Dr. R. von Lendenfeld, F.L.S., I have lately received a copy of a recent paper by him on the Australian Chalininæ*. For several reasons this important memoir, consisting of no less than 105 pages and illustrated by ten beautiful plates, seems to me to deserve special comment in this place.

The paper is founded mainly on the large collection of Chaline sponges made by the author during his residence in Australia; and he has also had access to the collection in the British Museum. We are informed that the author's own

* “Die Chalineen des australischen Gebietes.” Von Dr. R. v. Lendenfeld. Separatabdruck aus den Zoologischen Jahrbüchern. Zweiter Band, 1887.

collection, which is now in the possession of the British Museum, includes 153 species (and varieties), of which 131 are new, and that the number of known Chalininæ is thereby increased from 96 to 227. The author possessed good spirit-material of 54 species, so that he was enabled to study carefully the structure of individual representatives of the different groups. Under these circumstances he has found it necessary to create a new system of Chalininæ.

The main body of the paper is divided into four sections:—
 “I. Morphologie der Chalinidæ; II. Das System der Chalininæ; III. Die geographische Verbreitung der Chalinidæ; IV. Die australischen Chalininæ.”

I. *The Morphology of the Chalininæ.*

I naturally consider the morphological section to be of the greatest general interest, and I can but wish that it were a little longer. One or two statements call for special remark.

On page 726 we find the sentence “Es ist keine incrustirende Chalinide bekannt.” In view of the facts of the case this seems to be a rather hasty generalization. In our Preliminary Report on the Monaxonida of the ‘Challenger’ Expedition, published in this journal in 1886, Mr. Ridley and I have described an incrusting species of *Chalina* under the name *Chalina rectangularis*, and our specific diagnosis commences with the words “Incrusting, thin, with low mound-like prominences, each bearing a vent”*. Dr. von Lendenfeld, however, surmounts this difficulty in rather a novel fashion, namely by placing *Chalina rectangularis*, Ridley and Dendy, in a genus of his own, *Dactylochalina*, which he characterizes as “dickfingrig” (!), wherein our incrusting *Chalina* appears under the name “*Dactylochalina rectangularis* Lendenfeld.” But there is another difficulty which is not so easily got over, and that is that the author himself describes on p. 823 of the work under consideration a new species under the name “*Hoplochalina incrustans* n. sp.,” the diagnosis of which commences with the words “Klein, incrustirend, 4 mm. hoch”!

Any detailed information with regard to the canal-system of the Chalininæ is, of course, of the highest importance, and it is disappointing to find that the section of the paper devoted to this subject is very brief. It will be best to give the gist of the author’s conclusions on this head in his own words:—“Das Canalsystem der Chalinen ist sehr einfach.

* Ann. & Mag. Nat. Hist. ser. 5, vol. xviii. p. 331.

Die Poren führen in mässig ausgedehnte Subdermalräume. . . . Die von dem Subdermalraumboden entspringenden, einführenden Canäle sind ziemlich weit und entbehren jeglicher KlappenVorrichtung. Besonders auffallend ist die sehr beträchtliche Weite der letzten Verzweigungen derselben, welche in einzelnen Fällen fast so weit wie die Stämme selbst sind. Sie übertreffen den Durchmesser der Geisselkammern in vielen Fällen. Ihr Durchmesser sinkt nicht unter 0·02 mm. herab.

“Die Geisselkammern sind kugelig und besitzen eine kleine Ausströmungsöffnung, deren Durchmesser ein Viertel oder weniger von jenem der Kammer besitzt. Der Durchmesser der Kammern schwankt zwischen 0·02 und 0·04 mm. Die kleineren Kammern sind vorherrschend. . . .

“Die ausführenden Canäle sind ungefähr ebenso weit wie die zuführenden und entbehren, wie diese, der KlappenVorrichtungen. Am Pseudosculum der röhrenförmigen Formen wird selten, namentlich bei einigen *Phylosiphonia*-Arten, ein ringförmiger Sphincter beobachtet, der durch ein specielles Skelet gestützt sein kann. . . .

“Es geht hieraus hervor, dass das Canalsystem der zu der Gruppe Chalininae vereinten Formen ziemlich unveränderlich ist, und es leistet diese Monotonie desselben in gewissem Grade Bürgschaft für die Solidarität der hier zur Subfamilie der Chalininae vereinten Spongien.”

This brief account is supplemented by some very remarkable figures, which, however, are of doubtful assistance in clearing up the question as to the nature of the canal-system. In these figures (plate xxvii. figs. 14, 16), taken from two species (*Phylosiphonia superba*, Lendenfeld, and *Cladochalina mollis*, Lendenfeld), the flagellated chambers are figured, not as opening direct into the wide exhalant canals, as would seem to be implied, though not explicitly stated, in the letterpress, but through the intermediation of very remarkable, funnel-shaped canaliculi. If these canaliculi really exist, it is, of course, a very important fact, and it is indeed strange that no mention of them should be made either in the section on the canal-system or in the description of the plate. Either we must suppose that the figures are of that more or less imaginative character which has unfortunately been so prevalent in works on sponges, or that the account of the canal-system is imperfect.

Judging from my own researches on the canal-system of *Pachychalina spinosissima*, I am inclined to accept the former hypothesis, and to doubt the existence of the funnel-shaped canaliculi. In *Pachychalina spinosissima* I have lately figured

and described* the exhalant canal-system as being typically eurypylous, the flagellated chambers opening directly by means of *wide* mouths into the wide exhalant lacunæ, a condition about the existence of which in that species there cannot be the slightest doubt, and which is thoroughly in harmony with Dr. von Lendenfeld's and my own published opinions regarding the close relationship of the Chalininæ to the Renierinæ. If, however, Dr. von Lendenfeld's figures are correct, then we have two types of canal-system to deal with in the group Chalininæ, and his statement "Es geht hieraus hervor, dass das Canalsystem der zu der Gruppe Chalininæ vereinten Formen ziemlich unveränderlich ist, und es leistet diese Monotonie desselben in gewissem Grade Bürgschaft für die Solidarität der hier zur Subfamilie der Chalininæ vereinten Spongien," would seem to fall to the ground.

The comparative length of the section on the spicules of the group is due to the fact that Dr. von Lendenfeld includes amongst his Chalininæ a number of species possessed of other than oxeote megasclera, and also certain species which even have microsclera, a proceeding which, in my opinion, is quite unjustifiable. But I shall return to this question later on, and have only to remark, with regard to the spicules described and figured, that *Gelliodes poculum*, Ridley and Dendy, has certainly not got any sigmata of the very remarkable shape figured as belonging to that species (plate xxvii. fig. 9).

The author's discoveries with regard to the nervous system of the Chalininæ are most important and worthy of the most careful attention. He finds that the nervous system consists of irregular cells, distributed in the neighbourhood of the pores. These always remain single, and there are usually from three to five to each pore. They appear to be ganglion-cells, and each one gives off a process which projects beyond the margin of the pore as a distinct "thorn" into its lumen (plate xxvii. fig. 15). Future investigators will do well to endeavour to confirm these very remarkable and important results.

It is also very interesting to learn that the Chalininæ possess spongioblasts like those of the true horny sponges—a fact which was before almost certain from analogy, but which it is most important to have confirmed by direct observation.

The embryological section calls for no special comment, and this part of the subject is left pretty much in *statu quo*.

* Proc. Zool. Soc. 1887, p. 524, woodcut, fig. 6.

II. *The Systematic Position and Classification of the Chalininæ.*

In dealing with this portion of our subject it is necessary in the first place to endeavour to decide the all-important question "What is a Chalinine sponge?"

In our Preliminary Report* on the 'Challenger' Monaxonida Mr. Ridley and I have divided the suborder Halichondrina (Vosmaer) (excluding the Spongillidæ) into the following four families:—(1) Homorrhaphidæ, (2) Heterorrhaphidæ, (3) Desmacidonidæ, (4) Axinellidæ.

The Homorrhaphidæ are characterized by the fact that the megasclera are all diactinal, either oxea or strongyla, and there are no microsclera. They are divided into two sub-families—(1) the Renierinæ, in which the spicules may be united together by a small proportion of spongin, but are never completely enveloped in it; and (2) the Chalininæ †, in which a considerable amount of spongin is present, typically forming a thick sheath, completely enveloping the spicules and uniting them into strong fibres.

According to this arrangement, then, a *Chalinine sponge* is a *Halichondrine* with *diactinal megasclera* (*skeleton-spicules*) and *no microsclera* (*flesh-spicules*), and with a *large amount of spongin uniting the spicules into strong fibres*.

Since the publication of our Preliminary Report I have had occasion to pay very considerable attention to this group of sponges, and have not yet seen any reason to alter our original view.

Dr. von Lendenfeld appears, however, to think differently upon this subject, and of course every man has a perfect right to his own opinion. Strange to say, however, in the paper under discussion he gives the following scheme of classification (p. 761):—

"Subordo HALICHONDRINA.

1. Fam. *Spongillidæ*. Mit Gemmulæ,
2. Fam. *Homorrhaphidæ*. Ohne Gemmulæ und ohne differente Fleischnadeln,

* In this and other cases I refer to our Preliminary Report rather than to our complete Report, because at the time when Dr. von Lendenfeld wrote his paper the latter was not published.

† By an oversight these names appear as "*Renierina*" and "*Chalinina*" in our Preliminary Report; this oversight is rectified in the full Report.

3. Fam. *Heterorrhaphidæ*. Ohne Gemmulæ mit differenten Fleischnadeln ohne Anker,
4. Fam. *Desmacidonidæ* *. Ohne Gemmulæ, Fleischnadeln, Anker.

Familia *Homorrhaphidæ*.

1. Subf. *Renierinæ*. Nadeln nicht vollständig von Spongin umschlossen.
2. Subf. *Chalininæ*. Das Skelet besteht aus einem Sponginfasernetz mit eingelagerten Nadeln."

In this classification the Axinellidæ appear to be altogether left out of account. Yet, in spite of this omission, it bears a very striking resemblance to that published by Mr. Ridley and myself, as given above. In fact Dr. von Lendenfeld appears to have adopted our classification in the main, but instead of giving it in the way we gave it and with the significance which we attached to the different groups, he has modified it to suit his present purposes, thereby, in my opinion, almost entirely destroying its value. Perhaps under these circumstances it is as well that he does not state the source whence he obtained it.

The subfamily Chalininæ is described on p. 761 as follows:—"Homorrhaphidæ mit mächtiger Entwicklung des Spongins—Cornacuspongiæ mit einem Skelet, welches aus einem Netz von Hornfasern besteht, in denen Stabnadeln eingelagert sind. Mit unbedeutenden Subdermalräumen, einfachem Canalsystem und ziemlich grossen, kugligen Geisselkammern, welche mit einer kleinen Ausströmungsöffnung versehen sind. Mit nahezu hyaliner Grundsubstanz. Die Skeletfasern sind nicht durch vorstehende Nadeln stachelig. Fleischnadeln, wenn vorhanden, einfach, Toxius, Sigma, Amphitoxius, Spirula, Spirobacter. Keine Anker."

Now perhaps the most important feature of the classification proposed by Mr. Ridley and myself is the erection of the family Homorrhaphidæ to include those *Halichondrina* which

* One of the most important features of our Preliminary Report was the use of the term *Desmacidonidæ* to include all those Halichondrine sponges in which chelæ (anchorates) occur, and our diagnosis runs:—"Family 3. Desmacidonidæ. Skeleton-spicules of various forms. Anchorate flesh-spicules normally present." It is therefore rather surprising to find, on p. 732 of Dr. von Lendenfeld's work, the passage "Anders verhält es sich mit den Ankern. Diese bilden ein verwerthbares Criterium, und ich vereinige deshalb auch alle Cornacuspongiæ mit Ankern in eine Gruppe, Desmacidonidæ," without the slightest reference to the fact that we had already done precisely the same thing.

possess only diactinal megasclera and *no* microsclera; and Dr. von Lendenfeld, as we have seen, himself describes them as being "ohne differente Fleischnadeln." What, then, are his "Toxius, Sigma, Amphitoxius, Spirula, Spirobacter," if not "differente Fleischnadeln"? and how can he possibly include such forms as possess these spicules amongst the Chaliniæ?

It has been demonstrated again and again by various authors that the mere possession of a large amount of spongin in the skeleton is not a sufficient guide to the systematic position of a sponge; and to found a group on this character alone is totally out of accord with the present state of our knowledge. Spongin is enormously developed in many of the Desmacidonidæ, and it also occurs abundantly in the Heterorrhaphidæ and Axinellidæ.

Amongst the Heterorrhaphidæ the subfamily Gelliinæ (Ridley and Dendy) is characterized by the presence of diactinal megasclera and microsclera in the form of sigmata or toxa. It contains three genera, *Gellius*, Gray, *Gelliodes*, Ridley, and *Toxochalina*, Ridley. *Gelliodes* differs from *Gellius* solely in the possession of a larger proportion of spongin in the skeleton; and yet Dr. von Lendenfeld removes *Gelliodes* from the Gelliinæ and places it amongst the Chaliniæ; and he does the same with *Toxochalina*, which also happens to possess much spongin. If he thinks that the characteristic microsclera (sigmata and toxa) of these two genera are not sufficiently "differente" * to justify their separation from the Chaliniæ then the whole family Heterorrhaphidæ must, for him, fall to the ground, for none of the genera therein included, except *Vomerula* and *Hamacantha*, have more "differente" microsclera; but he accepts the family in his classification. It is clear that *Gelliodes* must go where *Gellius* goes, the mere presence of a greater or less amount of spongin cannot in this case be regarded as of more than generic value; but no one would think of calling *Gellius* a Chalinine sponge.

In fact it is obvious that we must depend on spicules rather than on spongin for guides to classification. In putting such forms as *Gelliodes* and *Toxochalina* amongst the Chaliniæ Dr. von Lendenfeld does away at once with all distinction between the Homorrhaphidæ and Heterorrhaphidæ; and under such circumstances he has no business to retain these two groups in his system.

* On p. 797, however, the "subgenus" *Toxochalina* is defined thus:— "Phyllosiphoniæ mit differenten Fleischnadeln (Toxii)," which scarcely seems in accordance with the previous statement that the Homorrhaphidæ, as a family, are "ohne differente Fleischnadeln" (p. 761).

The close relationship between the Chalininæ and Renierinæ is now fully demonstrated, and if further proof were needed I think I may fairly claim to have given it in my recent papers on the West-Indian Chalininæ * and on *Pachychalina spinosissima* †. Indeed the distinction between the two groups is an arbitrary one and of a quantitative rather than a qualitative character. Hence the two are united together in one family under the name Homorrhaphidæ, and I still think that the family Homorrhaphidæ, as constituted by Mr. Ridley and myself, is a fairly natural one; but it would certainly no longer be so were we to include therein the genera *Gelliodes* and *Toxochalina* ‡.

It would be too long and too difficult a task to offer in this place any detailed criticism of Dr. von Lendenfeld's arrangement of his Chalininæ; but for the information of the reader I will briefly give the classification of the group proposed by him. For diagnoses of the different subdivisions the reader is referred to the original memoir.

Subfamilia CHALININÆ.

I. Tribus CHALININÆ RETICULATÆ.

I. Gruppe CACOCHALININÆ.

1. Genus *Cacochalina*, O. Schmidt, 1870.
2. „ *Chalinopora*, n. g.
3. „ *Cladochalina*, O. Schmidt, 1870, emend.
4. „ *Chalinella*, n. g.

II. Gruppe PACHYCHALININÆ.

5. Genus *Chalinissa*, n. g.
6. „ *Pachychalina*, O. Schmidt, 1868, emend.
7. „ *Ceraochalina*, n. g.
8. „ *Chalinopsis*, O. Schmidt, 1870.

III. Gruppe PLACOCHALININÆ.

9. Genus *Antherochalina*, n. g.
10. „ *Euplacella*, n. g.
11. „ *Placochalina*, n. g.
12. „ *Platychalina*, Ehlers, 1870.

IV. Gruppe GELLIODINÆ.

13. Genus *Gelliodes*, Ridley, 1884.
14. „ *Spirophora*, n. g.

* Abstracted in Proc. Zool. Soc. 1887, p. 503.

† *Loc. cit.* p. 524.

‡ I take these as examples. Dr. von Lendenfeld also includes other genera, such as *Spirophora*, n. g. (= *Trachycladus*, Carter), which, in my opinion, have no business in the group.

V. Gruppe SIPHONINÆ.

15. Genus *Sclerochalina*, O. Schmidt, 1868.
 16. " *Phylosiphonia*, n. g.
 1. Subgenus *Toxochalina*.
 2. " *Anatovius*.
 17. " *Siphonochalina*, O. Schmidt, 1868, emend.
 18. " *Dasychalina**, Ridley and Dendy, 1886.
 19. " *Siphonella*, n. g.

VI. Gruppe EUCHALININÆ.

20. Genus *Dactylochalina*, Lendenfeld, 1885.
 21. " *Euchalinopsis*, n. g.
 22. " *Euchalina*, n. g.
 23. " *Chalinodendron*, n. g.

VII. Gruppe ARENOCHALININÆ.

24. Genus *Arenochalina*, n. g.

VIII. Gruppe CHALINORHAPHINÆ.

25. Genus *Chalinorhaphis*, n. g.

2. Tribus CHALININÆ DENDROIDÆ.

IX. Gruppe HOPLOCHALININÆ.

26. Genus *Hoplochalina*, n. g.

Such, then, is Dr. von Lendenfeld's arrangement of the group; I leave it to speak for itself, and will proceed at once to discuss the nomenclature adopted by him for the genera and species.

III. *The Nomenclature of Genera and Species.*

On this subject a great deal might be said; but I will endeavour to make my remarks as short as possible.

That Dr. von Lendenfeld holds very peculiar views on the subject of zoological nomenclature will be evident from what follows.

Firstly with regard to his new genera, I would venture to point out that the very remarkable genus *Spirophora* appears to be thoroughly identical with Mr. Carter's *Trachycladus*, of which the type species (possibly identical with one of those described by Dr. von Lendenfeld) was fully described so far

* Dr. v. Lendenfeld remarks, "Diese Gattung soll eingezogen werden, wie Mr. Dendy mittheilt." This is quite true; but he does not say what is to become of the three species included in it, viz. *D. fibrosa*, *D. fragilis*, and *D. melior*. In our 'Challenger' Report we have included these three species in the genus *Pachychalina*.

back as 1879*. I have examined Dr. von Lendenfeld's specimens of "*Spirophora*," and cannot conceive what possible claims they have to be included amongst the Chalininæ. The genus *Trachycladus*, as it must of course be called, is certainly a difficult one to locate; but it seems to me that it would be difficult to place it in a much less appropriate position.

The creation of the new genus *Phylosiphonia* would seem to be equally unfortunate. It is a comprehensive genus, and includes species both with and without microsclera. Accordingly it is divided into two subgenera:—(1) *Toxochalina* †, with microsclera, and (2) *Anatoxius*, without microsclera. The author seems a little doubtful as to the generic nomenclature of the species described by him under the subgenus *Toxochalina*, so that we have the following curious result:—

"1. *Toxochalina foliodes* Lendenfeld.

"*Toxochalina foliodes* Ridley.

"2. *Phylosiphonia robusta* Lendenfeld.

"*Toxochalina robusta* Ridley."

All the remaining species, both of *Toxochalina* and *Anatoxius*, are described under the generic name *Phylosiphonia*.

But it is very difficult to understand why the new genus *Phylosiphonia* should have been introduced at all. The type species of Schmidt's genus *Siphonochalina* (*S. coriacea*) is actually included in the list of species of *Phylosiphonia*, where it figures under the name "*Phylosiphonia coriacea* Lendenfeld." Obviously then *Siphonochalina* is the correct generic name for all those species of "*Phylosiphonia*" which have no microsclera (subgenus *Anatoxius*, Lendenfeld), while the correct generic name for those with microsclera (toxa) is *Toxochalina*, Ridley. To make *Toxochalina*, Ridley, generically identical with *Siphonochalina*, Schmidt, appears to be an altogether unwarrantable proceeding.

If possible the confusion here introduced is still worse compounded by the fact that Dr. von Lendenfeld actually uses Schmidt's name *Siphonochalina* for some of those species of tubular Chalininæ "mit conulöser Oberfläche," and calls the genus "*Siphonochalina* O. Schmidt 1868 emend.," quite regardless of the fact that Vosmaer‡ had already created a genus, *Spinoseella*, which includes the conulose or spinose

* Ann. & Mag. Nat. Hist. May 1879, p. 343.

† Ridley's genus.

‡ Bronn's Klass. u. Ordnung. des Thierreichs, Porifera, p. 342.

species, as opposed to the genus *Siphonochalina*, Schmidt, which includes the smooth species, the type species of *Siphonochalina*, *S. coriacea*, being perfectly smooth, as shown by Schmidt's illustration thereof*.

In short, the tubular Chalininæ (excluding those forms with microsclera, which I cannot regard as Chalininæ at all) may be very simply dealt with by dividing them between the two genera *Siphonochalina*, Schmidt, and *Spinoseella*, Vosmaer. The new genus *Phylosiphonia* is then quite superfluous; and the same remark also applies to Dr. von Lendenfeld's new genus *Siphonella*, whose species come under *Spinoseella*, Vosmaer.

The peculiarities in nomenclature, however, show themselves most strikingly in the case of the specific names. In the first place Dr. von Lendenfeld attaches his own name to every species which he places in a genus different from that to which its real author had assigned it, thus, as it were, capturing all stray species and taking forcible possession of them. This fact gives us some insight into his method of working, but it does not explain by any means all the noticeable peculiarities.

Probably the printers have had some hand in the remarkable transformation of "*Pachychalina lobata* Ridley," into "*Chalinissa oblata* Lendenfeld," as in the case of several other minor errors which need not be enumerated. We cannot, however, thus explain the nomenclature of the author's "*Ceraochalina papillata* n. sp." This new species includes the following, as given by its founder:—

Ceraochalina papillata n. sp.

I. *Varietas pergamentacea*.

Cladochalina armigera var. *pergamentacea* Ridley.

Cladochalina pergamentacea Ridley.

II. *Varietas armigera*.

Cladochalina armigera O. Schmidt.

Cladochalina armigera Ridley.

III. *Varietas macropora*.

IV. *Varietas intermedia*.

V. *Varietas micropora*.

* Spong. d. Küste v. Algier, Taf. ii. fig. 4.

Whatever may be the real name of this comprehensive species, it certainly cannot be "*Ceraochalina papillata* n. sp.!"

Again, let us take the following:—

Ceraochalina nuda Lendenfeld.

I. *Varietas oxyus*.

Cladochalina nuda Ridley.

II. *Varietas oxystrongylus*.

Cladochalina nuda, var. *abruptispicula* Ridley.

This is beyond comment.

On p. 813 "*Chalina monilata* Ridley" is avowedly described under the name "*Dactylochalina australis* Lendenfeld," and on p. 815 we are informed that "*Chalina oculata* Bowerbank" is "Unten als *Euchalinopsis oculata* var. *elegans* Lendenfeld, beschrieben"; var. *elegans*, however, does not again make its appearance, but under "*Euchalinopsis oculata* Lendenfeld," we find *Chalina oculata*, Bowerbank, given as a synonym.

This free-and-easy system of nomenclature is doubtless very convenient for one engaged in the description of genera and species, and saves a good deal of time and trouble; but it can scarcely be recommended as being well adapted to promote our zoological knowledge.

The nomenclature of sponges is already in a state of dire enough confusion and does not require to be made any more involved. It is very tempting to overthrow the work of previous authors and make a fresh start on one's own account; but it can scarcely be expected that such a method will obtain the approval of other workers. I do not wish to enter into any zoological polemics, but as a zoologist, and more especially as a spongologist, I feel bound to enter a protest against such a mode of procedure.

At the same time I do not wish in the slightest degree to underestimate the value of Dr. von Lendenfeld's important contribution to our knowledge of the Chalininæ. He undertook and has completed a most difficult and laborious task; and I would especially call attention to the nine beautiful photographic plates of external form which accompany his memoir, the value of which for the identification of species can scarcely be overestimated.